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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,856	02/09/2004	Christopher F. Gallmeyer	99-647.1	9490

719 7590 07/05/2006

CATERPILLAR INC.
100 N.E. ADAMS STREET
PATENT DEPT.
PEORIA, IL 616296490

EXAMINER	
KEASEL, ERIC S	

ART UNIT	PAPER NUMBER
3753	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/774,856	GALLMEYER ET AL.	
	Examiner	Art Unit	
	Eric Keasel	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/9/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by van Lintel (US Patent Number 5,271,724).

Van Lintel discloses a valve comprising an actuator comprising a piezoelectric actuator (30); a member operatively connected to the actuator (56); a contact surface (54), wherein the member is operable to move relative to the contact surface and to contact the contact surface (see Fig. 4); and a control system operatively connected to the actuator for determining a position of the member relative to the contact surface (see Fig. 5 in combination with Fig. 1); wherein the control system comprises an actuator control circuit operatively connected to the actuator and operable to apply a control signal to the actuator, the control signal controlling movement of the member relative to the contact surface, and operable to receive an output from the actuator; and a seat detection circuit operatively connected to the actuator control circuit and operable to determine contact of the member with the contact surface from the output; and wherein the output comprises a voltage produced by the actuator.

3. Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Sims et al. (US Patent Number 5,354,032).

Sims et al. disclose a valve comprising an actuator comprising a piezoelectric actuator (1B); a member operatively connected to the actuator (1A); a contact surface (5A), wherein the member is operable to move relative to the contact surface and to contact the contact surface; and a control system operatively connected to the actuator for determining a position of the member relative to the contact surface (see Figs. 1 and 5 and column 4, lines 11-26); wherein the control system comprises an actuator control circuit operatively connected to the actuator and operable to apply a control signal to the actuator, the control signal controlling movement of the member relative to the contact surface, and operable to receive an output from the actuator; and a seat detection circuit operatively connected to the actuator control circuit and operable to determine contact of the member with the contact surface from the output; and wherein the output comprises a voltage produced by the actuator.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sims et al. in view of Irokawa et al. (US Patent Number 6,148,837).

Sims et al. disclose a valve comprising a piezoelectric actuator (1B); a member operatively connected to the actuator (1A); a contact surface (5A), wherein the member is operable to move relative to the contact surface and to contact the contact surface; and a control system operatively connected to the actuator for determining a position of the member relative to the contact surface (see Figs. 1 and 5 and column 4, lines 11-26); wherein the control system comprises an actuator control circuit operatively connected to the actuator and operable to apply a control signal to the actuator, the control signal controlling movement of the member relative to the contact surface, and operable to receive an output from the actuator; and a seat detection circuit operatively connected to the actuator control circuit and operable to determine contact of the member with the contact surface from the output; and wherein the output comprises a voltage produced by the actuator.

Sims et al. fail to disclose the control system controlling velocity and position with the control loop. Irokawa et al. disclose a control system used in a similar valve that determines both speed and position with the control loop comparing the actual and the desired parameters. It would have been obvious to one having ordinary skill in the art at the time the invention was

made to have used the control system of Irokawa et al. with the valve of Sims et al. in order to provide a control system that can change between a PD (position) control mode and a PID (position and velocity) control mode to eliminate overshoot or an oscillation as taught by Irokawa et al.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 13, 14, and 17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,285,115 in view of Sims et al.

Claim 2 of '115 fails to disclose an explicit recitation to a seat detection circuit (however, a position control circuit could be considered to encompass a seat detection circuit because the seated position is a position detected by the seat detection circuit). Sims et al. disclose a seat detection circuit used in a similar apparatus. It would have been obvious to one having ordinary

skill in the art at the time the invention was made to have used the seat detection circuit of Sims et al. with the device of claim 2 of '115 in order to detect the seated position of the valve and provide a closed loop control of the PE actuator as taught by Sims et al.

8. Claims 13-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,285,115 in view of Sims et al. and Irokawa et al.

Claim 2 of '115 fails to disclose an explicit recitation to a seat detection circuit (however, a position control circuit could be considered to encompass a seat detection circuit because the seated position is a position detected by the seat detection circuit). Sims et al. disclose a seat detection circuit used in a similar apparatus. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the seat detection circuit of Sims et al. with the device of claim 2 of '115 in order to detect the seated position of the valve and provide a closed loop control of the PE actuator as taught by Sims et al.

The modified claim 2 of '115 fails to disclose all the details to the control system controlling velocity and position with the control loop. Irokawa et al. disclose a control system used in a similar valve that determines both speed and position with the control loop comparing the actual and the desired parameters. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the control system of Irokawa et al. with the system of the modified claim 2 of '115 in order to provide a control system that can change between a PD (position) control mode and a PID (position and velocity) control mode to eliminate overshoot or an oscillation as taught by Irokawa et al.

Conclusion

9. Any inquiry concerning this communication should be directed to Eric Keasel at telephone number (571) 272-4929, who can normally be reached Monday-Friday. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ERIC KEASEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700